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NOTES ON THE LEAF EPIDERMIS AND CHROMOSOME
NUMBER OF SWALLENIA (GRAMINEAE)

DENNIS ANDERSON

During April, 1963, the author explored portions of Death, Saline, and Eureka valleys in Inyo County, California. Of special interest in Eureka Valley is the large sand dune at the south end and the series of endemics growing on and near it (Munz and Roos, 1955). Among the most striking of these endemics is the monotypic grass genus *Swallenia* (formerly *Ectosperma*, Soderstrom and Decker, 1963).

Swallenia alexandrae (Swallen) Soderstrom & Decker forms small, dense, somewhat isolated colonies around the lower one-third of the dune (fig. 1). The grass is a vigorous, almost bamboo-like plant up to five feet tall, with stiff, sharp-pointed, distichous leaves. In the first week of April these plants were just coming into bloom and material was fixed in 3:1 ethyl alcohol-glacial acetic acid for cytological and epidermal studies. This material is the basis for the following observations.

Metcalf (1960) did not note the presence of bicellular microhairs on the abaxial leaf surfaces of *Swallenia*. Material studied by the present author clearly shows the presence of occasional bicellular microhairs (fig. 2A). These are very fragile, the delicate terminal cell often collapsing in preparation of the slide. Other epidermal features observed agree with those reported by Metcalf.



FIG. 1. Colony of *Swallenia alexandrae* growing on sand dune at south end of Eureka Valley, Inyo Co., California. Last Chance Range in background.

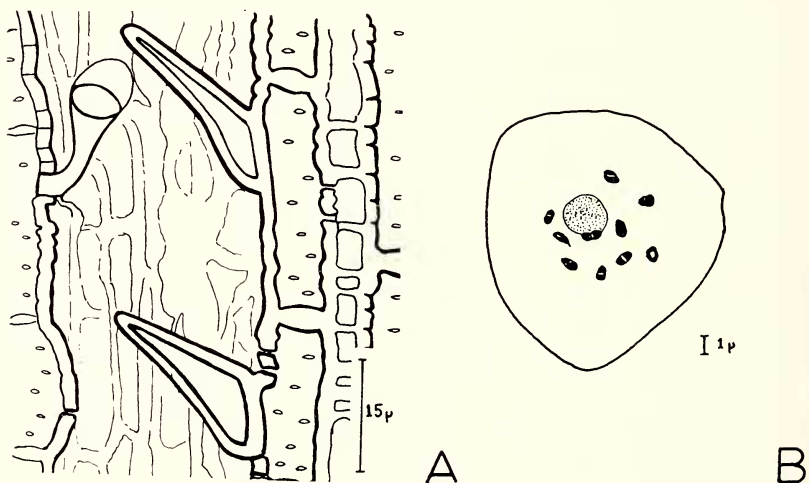


FIG. 2. A. Abaxial epidermis of the uppermost culm leaf; B, microsporocyte showing ten bivalents.

The chromosome number of *Swallenia* (Anderson 2406, UC), previously undetermined, is $2n=20$. This number was obtained by acetocarmine squashes of anthers. The chromosomes are small, averaging about 1μ in

length at diakinesis (fig. 2B). Pairing appeared normal in all cells examined.

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NOTES AND NEWS

SAXIFRAGA ESCHSCHOLTZII STERNB.—Although not described as such in the more recent Alaskan floristic works (E. Hultén, *Flora of Alaska and Yukon*, 913, 1945; J. P. Anderson, *Flora of Alaska and adjacent parts of Canada*, 290, 1959; I. L. Wiggins and J. H. Thomas, *A flora of the Alaskan arctic slope*, 240, 1962), this species is dioecious. Plants of both sexes are present in a collection made at Point Hope, July 3, 1962 (*Maxine Williams 191, 191A*, DS, OSC), from which the accompanying drawings were made (fig. 1). This type of sexual dimorphism is rare in *Saxifraga* and although it was discovered and illustrated long ago by Engler and Irmscher (*Das Pflanzenreich*, IV, 117(1): 164-165, 1916), it seems to be easily overlooked. The staminate flowers shrivel and become inconspicuous following anthesis, while the ripening pistillate ones retain their staminodia and might be thought to be perfect. According to field notes accompanying these collections the two types of flowers are quite distinct in form and color at anthesis. The staminate flowers are greenish-yellow, except for the red tips of the sepals and the vestigial styles; the sepals are sharply recurved. The pistillate flowers are principally red; their sepals are spreading or cupped upwards. In both sexes the small, narrow petals are yellow (not white, roseate, or hyaline, as suggested by Hultén, *loc. cit.*, or Wiggins and Thomas, *loc. cit.*).

At Point Hope, *S. eschscholtzii* grows near sea level, in gravel and thin turf on the fringes of the Eskimo settlement. This seems to be an unusual habitat for the species, as it contradicts specific statements that the plant is limited to mountainous regions (Hultén, *loc. cit.*; Wiggins and Thomas, *loc. cit.*; N. Polunin, *Circumpolar*

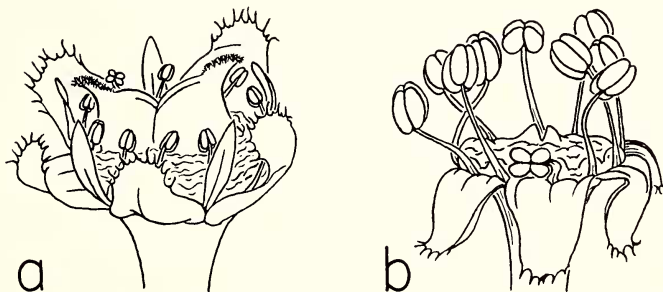


FIG. 1. Flowers of *Saxifraga eschscholtzii*, $\times 10$: a, pistillate; b, staminate, with petals removed.